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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 0000053816	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/008035	International filing date (day/month/year) 23 July 2003 (23.07.2003)	Priority date (day/month/year) 08 August 2002 (08.08.2002)
International Patent Classification (IPC) or national classification and IPC C07C 67/58		
Applicant BASF AKTIENGESELLSCHAFT		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 12 December 2003 (12.12.2003)	Date of completion of this report 16 September 2004 (16.09.2004)
Name and mailing address of the IPEA/EP Facsimile No.	Authorized officer Telephone No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/008035

## I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

- ☐ the international application as originally filed.
- ☒ the description, pages 1-7, as originally filed,  
 pages \_\_\_\_\_, filed with the demand,  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☒ the claims, Nos. 1-7, as originally filed,  
 Nos. \_\_\_\_\_, as amended under Article 19,  
 Nos. \_\_\_\_\_, filed with the demand,  
 Nos. \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
 Nos. \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☐ the drawings, sheets/fig \_\_\_\_\_, as originally filed,  
 sheets/fig \_\_\_\_\_, filed with the demand,  
 sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
 sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

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## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	1-7	YES
	Claims		NO
Inventive step (IS)	Claims	1-7	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-7	YES
	Claims		NO

### 2. Citations and explanations

1. This report makes reference to the following documents:

D1: DE 26 12 355 A (BASF AG), 6 October 1977  
D2: GB-A-1 030 214 (EASTMAN KODAK CO), 18 May 1966  
D3: DE 23 18 657 A (WOCHNER WALTER), 31 October 1974  
D4: DATABASE CA [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; SEDIVY, JOSEF: "Breaking of oil emulsions in water using multivalent cation salts", XP002262193, STN accession no. 118:45081

### 2. Novelty

- 2.1 The present application relates to a method for separating the esterification catalyst from a raw emollient ester by hydrolysis of the catalyst with an aqueous alkali solution and by separation of the aqueous phase which contains the hydrolysed catalyst by gravitational phase separation, a divalent or multivalent metal salt or a mixture of these salts being added to the raw ester before or during phase separation.

- 2.2 Document D1 discloses (page 3, paragraph 3 to page 4, paragraph 1, as well as the examples) a method as described in the present application. However, it does not disclose the admixture of a divalent or multivalent metal salt.
- 2.3 Document D2 discloses (page 3, right-hand column to page 4) a method for purifying emollient esters in which the neutralised or hydrolysed catalyst is not separated by phase separation but rather by filtration, after the smallest possible amount of aqueous alkali is used.
- 2.4 Documents D3 and D4 disclose methods for separating oil-in-water emulsions in lubricant emulsions or dirty water by the admixture of multivalent metal salts.
- 2.5 The subject matter of independent claim 1 and of its dependent claims, claims 2-7, differs from these known methods and is therefore novel (PCT Article 33(2)).
3. Inventive step
- 3.1 Document D2, which discusses and solves the problem of emulsion formation during phase separation, is regarded as the prior art closest to the subject matter of claim 1.
- 3.2 The present invention can therefore be considered to address the problem of devising an alternative method for separating the esterification catalyst from a raw emollient ester.

3.3 The solution to this problem, as proposed in claim 1 of the present application, involves an inventive step (PCT Article 33(3)) for the following reasons:

D2 (pages 3-4, neutralisation) proposes the use of greater amounts of solvent or the separation and separate preparation of the emulsion layer in order to break the emulsions. In D2, the problem is preferably solved by the use of the smallest possible quantities of concentrated alkali, by dispensing with phase separation and by a final filtration process. No suggestion is made of the use of multivalent metal salts.

Although documents D3 and D4 show the breaking of oil emulsions in lubricant emulsions or dirty water by the admixture of multivalent metal salts, a person skilled in the art is not prompted by the prior art to also use this procedure to purify raw emollient esters of the type described in D1 or D2.

3.4 Claims 2-7 are dependent on claim 1 and therefore also meet the PCT inventive step requirements.